

## CLAIMS:

1. A method for classifying an object in image data, comprising the steps of:  
assigning said image data to a node in a neural network, said node having an associated node image; and  
applying a normalized cross correlation measure to compare said image data and said node image if said image data and said node image are obtained under non-uniform illumination.
2. The method of claim 1, wherein a classification value for said object is determined by said normalized cross correlation measure.
3. The method of claim 1, wherein a determination of whether an image is obtained under non-uniform illumination further comprises the steps of normalizing intensity values in said image, dividing said image into a number of regions, computing the mean and the variance of said regions and determining if said image is uniform based on said mean and variance values.
4. The method of claim 1, wherein said classification value associated with said node is assigned to said image data if both of said image data and said node image are obtained under uniform illumination.
5. The method of claim 1, wherein said node image is not accepted if only one of said image data and said node image are obtained under uniform illumination.
6. The method of claim 1, wherein said applying step is only performed if said classification value does not satisfy a predefined threshold.
7. The method of claim 1, wherein said node has an associated class label identifying a class to which the object corresponds to and a classification value indicating the probability with which the object belongs to the class.

8. The method of claim 1, further comprising the step of outputting a class label based upon said normalized cross correlation measure.
9. The method of claim 1, wherein said neural network is a radial basis function network.
10. The method of claim 1, wherein said neural network is a back propagation network.
11. The method of claim 1, wherein said neural network is a multi-layered perceptron-based network.
12. The method of claim 1, wherein said neural network is a Bayesian-based neural network.
13. An apparatus for classifying an object in image data, comprising:  
a memory; and  
at least one processor, coupled to the memory, operative to:  
assign said image data to a node in a neural network, said node having an associated node image; and  
apply a normalized cross correlation measure to compare said image data and said node image if said image data and said node image are obtained under non-uniform illumination.
14. The apparatus of claim 13, wherein a classification value for said object is determined by said normalized cross correlation measure.
15. The apparatus of claim 13, wherein said processor is further configured to determine whether an image is obtained under non-uniform illumination by normalizing intensity values in said image, dividing said image into a number of regions, computing the mean and the variance of said regions and determining if said image is uniform based on said mean and variance values.

16. The apparatus of claim 13, wherein said classification value associated with said node is assigned to said image data if both of said image data and said node image are obtained under uniform illumination.
17. The apparatus of claim 13, wherein said node image is not accepted if only one of said image data and said node image are obtained under uniform illumination.
18. The apparatus of claim 13, wherein said node has an associated class label identifying a class to which the object corresponds to and a classification value indicating the probability with which the object belongs to the class.
19. The apparatus of claim 13, wherein said neural network is a radial basis function network.
20. The apparatus of claim 13, wherein said neural network is a back propagation network.
21. The apparatus of claim 13, wherein said neural network is a multi-layered perceptron-based network.
22. The apparatus of claim 13, wherein said neural network is a Bayesian-based neural network.
23. An article of manufacture for classifying an object in image data, comprising:  
a machine readable medium containing one or more programs which when executed implement the steps of:  
assigning said image data to a node in a neural network, said node having an associated node image; and  
applying a normalized cross correlation measure to compare said image data and said node image if said image data and said node image are obtained under non-uniform illumination.